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ABSTRACT

The gap between existing skills and desired or required skills is the impetus for the development of business/industry standards. Professional associations have taken the initiative in setting skill standards; state licensing exams are used to certify workers in some occupations. An impending work force crisis has triggered a demand for accountability. The Perkins Vocational and Applied Technology Education Act has further defined the need for standards, and many states have been challenged to develop them. Within the U.S. educational system, the trend toward competency-based education makes it possible to place occupational standards and certifications within a theoretical framework. The National Vocational Qualifications developed in Great Britain are one example of competency-based skill standards used to assess performance. Findings of a study visit to Denmark and Great Britain suggest the need for the expansion of occupational standards to include the core or common skills that cut across occupations and affective as well as cognitive skills. National skill standards benefit workers, employers, teachers, administrators, and state departments of education. They offer the following: certification of skill attainment, portability, assurance that certified workers have a predictable level of competence, definition of the skills and knowledge that must be taught, and a fair means by which vocational programs can be evaluated. Implementation of national skill standards requires collaboration among employers, employees, and educators. (YLB)

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ERIC Clearinghouse on Adult, Career, and Vocational Education

Business/Industry Standards and Vocational Program Accountability

by Bettina A. Lankard

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Industry skill standards are already in place for many industries in the United States and in a number of statewide vocational education programs that serve those industries. The linkage of skill standards between industry and vocational education hinges on a competency-based approach to education and training. The effectiveness of this approach has been recognized by other countries, such as Denmark and Great Britain, that have adopted this process for establishing their industry skill standards. The National Vocational Qualifications (NVQs), developed in Great Britain, is one example of competency-based skill standards used to assess performance. This *Digest* looks at the motivations behind the initiation of industry standards and of national and state skill standards that would provide vocational program accountability. It examines the competency-based approach to the development of standards in relation to their effect on vocational education, drawing on reviews of the NVQs in Great Britain.

Why Industries Set Skill Standards

The gap between existing skills and desired or required skills is the basic impetus for the development of business/industry standards at all levels—local, state, and national. Many of these standards were developed over time, industry by industry, in response to competition from other industrialized nations and for the purpose of quality control. In the early 1970s, for example, automobile manufacturers were finding that graduates of automotive technology classes were lacking the skills necessary to work on cars with advanced technology systems. The public, losing faith in the quality of new car repair, were either not buying new cars or not buying cars made in the United States. Therefore, to improve worker competence, the National Institute for Automotive Service Excellence began to require that auto mechanics be certified (Fretwell and Pritz 1994).

Over the years the professional associations of many industries have taken the initiative in setting skill standards. The American Institute of Certified Public Accountants, for example, has developed and implemented a national certification program through which it administers the Certified Public Accountants exam. The American Welding Society likewise administers tests for certification of workers in the welding profession. State licensing exams are used to certify workers in certain occupations as well, e.g., barber and chauffeur. On a national level, the Federal Aviation Administration has set standards for air traffic controllers, although in this case public safety is the primary force driving the action.

The Need for Skill Standards in Vocational Education

Most industry standards are established to improve worker competence and the products and services the workers provide. This practice has become increasingly relevant since the early 1980s when it became clear that the jobs of the future would require higher levels of basic skills in communication, mathematics, science, and technology. The work force crisis described in ***America's Choice: High Skills or Low Wages*** (Commission on the Skills of the American Workforce 1990) triggered the demand for accountability. Schools, challenged to improve the quality of education, were urged to "require all students to meet a high national standard of general education performance at about age 16" for which they would receive Certificates of Initial Mastery qualifying them to go on to college and more technical and professional education (Hudelson 1993, p. 34). The report also urged the United States to establish technical and professional education certificates of mastery in various occupational fields to be used to confirm competency achievement and to reflect the national standards for that field (ibid.).

The Carl D. Perkins Vocational and Applied Technology Education Act further defined the need for standards by challenging states and localities to "develop and implement accountability systems that document the progress of vocational education students and programs" (Hoachlander 1991, p. 20). Supported by Perkins funding, many states began to develop standards for assessing the educational progress of students and programs—standards that were developed under the direction of business and industry that could lead to worker certification. The Ohio Department of Education's Ohio Competency Analysis Profiles (OCAPS), coordinated by the Center on Education and Training at The Ohio State University, were developed for 40 key occupations through a consensus of businesses across the state. OCAPS link occupational competencies to basic and employability skills, which are, in turn, linked to an assessment system. The profiles are used statewide as a foundation for program improvement (Fretwell and Pritz 1994).

The Development and Use of Skill Standards in Vocational Education Programs

Within the U.S. educational system, the trend toward competency-based education makes it possible to place occupational standards and certifications within a theoretical framework (Fretwell and Pritz 1994). In a competency-based system, the competencies or skills required in a given occupation are carefully identified and verified by expert workers from business and industry who are currently employed in the occupation. During the process of developing the occupational profiles of required competencies for the occupation, observable and measurable criteria are established. These criteria become the performance standards against which competency attainment is measured.

The competency-based approach to the setting and realization of standards of performance has been used in the United States since the 1970s. British industries have recently used a competency-based approach to establish the National Vocational Qualifications (Melton 1994). As the impact of NVQs on teaching and training increased, so did the controversy about the validity of NVQs as a basis for assessing performance. Melton gives several recommendations for ways to strengthen the implementation of competency-based skill standards based on his review of the implementation of NVQs in Britain:

1. Give attention to the role of personal motivation in student/worker achievement of established standards.
2. Extend the measurement of skills to a higher level that includes integration of other relevant (core) skills relevant to the performance of the designated skill or competency.
3. Use sampling to measure the performance of candidates within all the various contexts of the competency area.
4. Address higher-order thinking skills, e.g., problem solving, interpersonal skills, numeracy, communication, etc., that allow transfer of knowledge and skills in other contexts and applications.
5. Take into account the self-development needs of the individual, not only those of the industry.

Jenkins et al. (1994) report the findings of a team from the United States who visited Denmark and Great Britain for 2

weeks in 1993 to study innovations in the education and training of young people for work. The focus of the study was to examine the use of standards, assessments, and credentialing in preparing young people in vocational education programs in Denmark and Great Britain for work in a global economy. The recommendations for the guidance of vocational program accountability presented by Jenkins et al. (1994) are as follows (pp. iii-viii):

- Establish a single body to oversee the setting of skill standards for all occupations and industries.
- Understand that standards by themselves will not produce lasting, systemic reform.
- Begin by building a national consensus about the aims of vocational education.
- Use the restructuring of companies around high performance management practices as a lever for encouraging employers to adopt skill standards for training and organizational development.
- Question the assumption that academic learning leads to superior transferability of skills and knowledge. Ensure that goals and standards for the system reflect a balance between theoretical and practical learning.
- Rely on standards for what students should be able to do, rather than directives of how teachers should teach, to drive innovation in teaching.

The recommendations of both Melton (1994) and Jenkins et al. (1994) suggest the need for the expansion of occupational standards to include the core or common skills that cut across occupations and affective as well as cognitive skills. The suggestions of these two reviewers do not negate the utility of the competency-based approach, but rather call for additional sensitivity to the total development of the individual in establishing standards.

Although most of the major industrialized nations have established competency-based national skill standards, some unions and educators are reluctant to adopt them. Proponents, however, say that "national skill standards would improve the U.S. workforce and product quality in the global marketplace, provide better education and more portable employment credentials for American workers, and increase accountability among schools, teachers, and vocational programs" (Hudelson 1993, p. 32).

The Benefits for Business/Industry and Vocational Education

Hudelson (1993) summarizes the benefits national skill standards offer workers, employers, teachers, administrators, and state departments of education:

- For workers, national skill standards offer the certification of skill attainment and a recognition of that status by others, especially employers. Because the standards are national in scope, they are portable, enabling job mobility across states and, in some cases, around the world.
- For employers, national skill standards ensure that certified workers will have a predictable level of competence as measured on a national or worldwide scale.
- For teachers, national skill standards define the skills and knowledge that must be taught at various levels to produce a qualified graduate whose skills are competitive with graduates of other schools. Additionally, standards make easier and less costly the development of curricula and training modules.
- For administrators, national skill standards provide a fair means by which vocational programs in a variety of schools can be evaluated. For example, How many of their graduates are from certified programs? What percentage can pass certificate of mastery examinations in their field?
- Federal administrators can also use the national skill standards as assessment tools. States can judge which occupational programs meet industry standards, which percentage of their graduates pass the national standard exam in their field, and which teachers are able to pass the certificate of mastery examination for the occupational skills they teach.

Implementation Requires Collaboration

The effective implementation of national skill standards is dependent upon the resolution of several issues (ibid.):

Unions' Fears. Unions are reluctant to give up their gatekeeper role, concerned that this will undermine union apprenticeship programs and collective bargaining power.

School/Teacher Acceptance. Teachers are failing to attend workshops or other programs to help them upgrade their occupational skills and meet a national standard.

Employer Determination. Employers within each industry are hesitant about taking the time and leadership necessary to require their workers to have national certificates of mastery in occupations for which they exist.

These issues illustrate the need for collaboration among all stakeholders in a global economy immediately affected by the adoption of national skill standards—employers, employees, and educators. A shared commitment to the concept of skill standards and a recognition of the benefits they afford is necessary for the successful implementation of the standards. Federal support is also important. The U.S. government is initiating action by offering incentives for three-way collaboration among these stakeholders. "The U.S. Departments of Labor and Education are currently sponsoring grants to 22 major industries to develop national skill standards (occupational, basic, and employability) and link them to education and training" (Fretwell and Pritz 1994, p. 9).

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